REMARKS

Reconsideration and allowance of the claims of the present application are respectfully requested. Claims 1, 3, and 6 have been amended, and claim 2 cancelled. Claims 12-18 and 20-24 were previously withdrawn pursuant to a restriction requirement, and claims 19 and 25 were previously cancelled without prejudice. Accordingly, claims 1 and 3-11 are pending.

In particular, claim 1 has been amended to include the subject matter of claim 2, i.e., to include the feature that the pectin is adsorbed to the protein base. Claim 1 has also been amended to explicitly recite the term "protein base" solely to ensure antecedent basis for this term in claims depending therefrom (e.g., as found in claims 3 and 10).

Claims 3 and 6 have been amended solely to change the dependency of the claim or to correct a typographical error.

Accordingly, the amendments made to the claims do not introduce new matter. Furthermore, as all of the amended features of the instant claims were already considered by the Examiner in the previous Office Action, the amendments made herein do not raise any new issue for the Examiner.

In the Office Action, Claims 1 – 7, 10 and 11 are rejected under 35 U.S.C. § 103(a) as allegedly obvious in view of U.S. Patent 5,514,666 to Cerda et al. ("Cerda et al."). In making the rejection, the Examiner contends that Cerda et al. teach a protein powder composition containing protein and pectin. The Examiner acknowledges that Cerda et al. teach an amount of pectin (i.e., 30-35% pectin) that differs from the claimed pectin amount of 3-15%. Regarding this difference, the Examiner considers the amount of pectin to be an adjustable variable, non-critical to the invention, and subject to optimization by routine experimentation by

those skilled in the art. Accordingly, the Examiner does not consider the claimed pectin range to confer inventiveness to the claims.

However, Applicants disagree with the Examiner's assertion that the lower pectin amount of the instant claims is a non-critical and adjustable variable that could be accomplished by one skilled in the art by routine experimentation. First, it is understood that a main purpose of the pectin is to render the protein powder stabilized when the protein powder is mixed into a liquid (see page 4, lines 12-18 of the application as filed). Significantly, the lower amount of pectin in the claimed protein powder (i.e., relative to compositions of the art, such as Cerda et al.) is highly advantageous for the reason that less pectin is used to manufacture a stabilized protein powder. It would be appreciated by one skilled in the art that such a significantly lower amount of pectin (i.e., less than half in many cases) results in significant reductions in cost. Furthermore, the significantly reduced amount of pectin endows the protein powder with the highly desired characteristic, when admixed into a liquid, of producing a protein-containing liquid with a significantly lowered viscosity as compared to the viscosity of such liquids that contain higher amounts of pectin (see page 5, lines 35-36 of the application as filed).

With all of the advantages of a lower amount of pectin, Applicants consider it significant that Cerda et al. teach a minimum amount of pectin that is at least two times the amount of the claimed maximum amount of pectin. Applicants believe that the reason Cerda et al. teach such a higher amount of pectin is because, in contrast to the instant claims, Cerda et al. do not teach the feature of the instant claims that the pectin is adsorbed to the protein base. The adsorption of pectin, as claimed, allows the protein base to be significantly stabilized, but with significantly less pectin as compared to protein base that is not adsorbed with pectin. Without the adsorption of pectin, Cerda et al. are attempting to impart stability of the protein powder by

compensating with a much larger amount of pectin. However, as discussed earlier, use of a much larger amount of pectin is undesirable because it increases costs and raises the viscosity of liquid into which the protein powder has been admixed.

On page 4, first paragraph of the Office Action, the Examiner asserts that "...as Cerda et al. disclose the mixing of pectin and the protein, it is considered intrinsic that the pectin would be adsorbed to the protein, as is claimed by Applicants." However, as further discussed below, Applicants respectfully submit that the Examiner's assertion in this regard is purely speculative.

In particular, the instant application teaches that a special process of homogenization is employed to cause the pectin to be adsorbed to the protein base. Applicants direct the Examiner to, for example, page 6, lines 18-33 (and particularly, lines 23-25 therein) of the application as filed. As shown in the foregoing passages of the instant application, the homogenization process employed for causing pectin adsorption involves at least a process of high-shear liquid blending, and this is, preferably, performed under an elevated temperature (i.e., above 50°C) and elevated pressure (e.g., 10 or 20 MPa).

In contrast to the energy-intensive process taught in the instant application for inducing adsorption of pectin onto the protein, Cerda et al. teach simple mixing, i.e., with a stirrer. Applicants direct the Examiner, for example, to col. 4, lines 14-41 of Cerda et al. As would be appreciated by one skilled in the art, a flask equipped with a stirrer, as taught in Cerda et al. is incapable of subjecting a liquid to high-shear liquid blending. Moreover, Cerda et al. teach in the indicated passages that the mixing is conducted at room temperature. Cerda et al. also indicate that the pressure was normal atmospheric pressure (i.e., by not indicating a pressure).

Furthermore, the instant application as filed presents the results of comparative experiments that clearly demonstrate the inability of mixing (i.e., as opposed to homogenization) to effect stabilization of the protein powder. The lack of stabilization resulting from mixing is a result of the pectin not being adsorbed to the protein by this process. Specifically, Example 1 (page 6 of the application) describes the preparation of a protein powder by homogenization of a protein base with pectin (in this case, the pectin corresponds to high ester Grindsted® AMD 783). The "test sample" under Example 2 is prepared by mixing the protein powder of Example 1 into an aqueous solution. The "reference sample" under Example 2 is prepared by, first, preparing a protein powder by the same conditions of Example 1, except that no pectin was included. The resulting protein powder is then dry blended with pectin, and the resulting dry blend is mixed (not homogenized) into an aqueous solution under the same conditions as the "test sample" under Example 2. As shown by the tabulated results on page 8 of the application, the "test sample" solution under Example 2 showed no separation or sedimentation (i.e., it was stable), while the "reference sample" solution under Example 2 showed phase separation and sedimentation.

The foregoing exemplary results and data are highly significant because they show that simple mixing of a protein base and pectin (as demonstrated by the dry blending and solution mixing in producing the "reference sample" of Example 2) is not effective in producing a stabilized solution, particularly at the low concentrations of pectin used in the claimed invention as compared to Cerda et al. (3% pectin to protein was used in the "reference sample" of Example 2, as shown in the details provided therein).

In contrast, when the protein base and pectin are homogenized before mixing the resulting protein powder into an aqueous solution (as described in Example 1 for the "test sample" of Example 2), a highly stabilized solution is produced. Significantly, only 0.5% pectin

to protein was used in the "test sample" protein powder (see details of Example 1), which is significantly less than the amount of pectin used in non-homogenized Example 2. Yet, the protein powder of the "test sample" (i.e., prepared by homogenization, as detailed under Example 1) was significantly more stable than that produced in Example 2. Such a result is highly unexpected and unobvious, particularly in view of the teachings in the art, such as Cerda et al., of using higher amounts of pectin in an effort to impart stability to the protein powder.

Therefore, Applicants have shown that the claims, as amended, are not obvious in view of Cerda et al. Accordingly, Applicants respectfully request that the above 35 U.S.C. § 103(a) rejection citing Cerda et al. be withdrawn.

The Examiner has separately rejected claims 8 and 9 under 35 U.S.C. § 103(a) in view of Cerda et al., in further view of C. D. May, Pectins. Phillips et al., Handbook of Hydrocolloids, pp 169-188, Woodhead Publishing, © 2000 ("the May reference"). In making the rejection, the Examiner relies on Cerda et al. for allegedly teaching or suggesting all of the features of base claim 1. The Examiner relies on the May reference for allegedly teaching the additional feature of claims 8 and 9 that the pectin has an esterification degree of $\geq$ 60% and $\geq$ 70%, respectively. However, Applicants have already shown that Cerda et al. does not teach or suggest base claim 1. Moreover, the May reference does not compensate for the noted deficiencies of Cerda et al. Therefore, the combination of Cerda et al. and the May reference is similarly deficient in teaching or suggesting claims 8 and 9. Accordingly, as Applicants have established the unobviousness of claims 8 and 9 over the combination of Cerda et al. and the May reference, Applicants respectfully request this rejection to be withdrawn as well.

In view of the foregoing amendments and remarks, Applicants firmly believe that the pending claims are in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

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